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## PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 10/525,952  
Confirmation No. : 2625  
Applicant : D. Steinmueller  
Filed : Oct. 17, 2005  
Title : Method for monitoring sensor function  
TC/A.U. : 2857  
Examiner : M. C. Baran  
Docket No. : WITT3004/FJD  
Customer No. : 23364

## RESPONSE TO NOTICE OF NON-COMPLIANT APPEAL BRIEF

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22202-3514

Sir:

This is in response to the Notice of Non-Compliant Brief dated February 25, 2009. The revised Brief on Appeal is attached.

As to claim 16, it is identified specifically in the summary of the invention.

Respectfully submitted  
BACON & THOMAS, PLLC

  
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Date: March 27, 2009

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS AND INTERFERENCES



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**BRIEF ON APPEAL**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA. 22202-3514

Sir:

**INTRODUCTORY COMMENTS**

Pursuant to the provisions of 37 CFR 41.37, submitted herewith is Applicant/Appellant's Brief on Appeal along with the required fee. The period for response has been extended to expire on January 14, 2009 by filing herewith a Petition for a One Month Extension of Time and payment of the required fee.

Any additional fees necessary for this appeal may be charged to the undersigned's Deposit Account No. 02-0200.

**REAL PARTY IN INTEREST**

(37 CFR 41.37(c)(1)(i))

The real party in interest is Applicant/Appellant's assignee Endress + Hauser Conducta Gesellschaft Fur Mess-U, Regeltechnik MBH + Co. The assignment was recorded on October 17, 2005 at Reel 016890 and Frame 0307.

## **RELATED APPEALS AND INTERFERENCES**

(37 CFR 41.37(c)(1)(ii))

There are no related appeals or interferences with respect to the invention defined in this application.

## **STATUS OF CLAIMS**

(37 CFR 41.37(c)(1)(iii))

Claims 1 - 15 have been cancelled, and claims 16 - 30 are pending in this application.

Claims 16 - 30 are finally rejected under 35 USC 102(e) as being anticipated by Choe, U.S. Patent No. 6,510,397, and claim 18 is rejected under 35 USC 112, second paragraph as indefinite have been finally rejected.

Claims 16 - 30 are subject to this appeal.

## **STATUS OF AMENDMENTS**

(37 CFR 41.37(c)(1)(iv))

No amendment was filed after issuance of the Office Action of July 11, 2008.

## **SUMMARY OF CLAIMED SUBJECT MATTER**

(37 CFR 41.37 (c)(1)(v))

(References are to page and line of the specification)

The invention relates to a method for monitoring the functioning of sensors used for the measuring and monitoring of state parameters of liquids and gases (Pg 1, lines 2 - 4). The service life of sensors used in process measurement technology becomes a problem, especially when monitoring chemical processes. The present invention address this problem (Pg. 1, lines 11 - 14). The present invention is based on the discovery that, from the historical chronological development of test parameters obtained either in the context of the measured

value registration or during periodic test states, especially during calibration procedures, predictions into the future can be made concerning the development of the sensor behavior to be expected. Thus, the still remaining life can be determined (Pg. 3, lines 20 - 26). The only independent claim, claim 16, defines the method of the invention as including several steps, namely, registering test parameters at time intervals or at time intervals during the course of registering measured values; storing the registered test parameters; evaluating a backward-looking chronological development of the test parameters in order to perform functional monitoring; predicting from the evaluations, the development of sensor behavior to be expected in the future; and obtaining thereby information concerning the duration of the remaining disturbance-free operation of the sensor (Pg. 3, lines 13 - 19 and Pg. 4, line 31 to Pg. 5, line 12).

**GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**  
(37 CFR 41.37(c)(1)(vi))

There are two grounds of rejection forming the two issues to be considered on this appeal. These are:

(1) Claim 18 is rejected under 35 USC 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Is claim 18 indefinite because of the recitation “a function is specified and used for a particular sensor” without specifying “which sensor or sensors are used for the specified function?” and

(2) Claims 16 - 30 are rejected under 35 USC 102(e) as being anticipated by Choe.

Are claims 16 - 30 anticipated by Choe under 35 USC 102(e)?

## ARGUMENTS

(37 CFR 41.37(c)(1)(vii))

(1)

### 35 USC 112

Claims 16 - 30 are directed to a method. The method monitors the functioning of sensors “which measure and monitor the state parameters of liquids or gases.” It is respectfully submitted that nothing more need be defined regarding the sensors for those skilled in the art. See, for example, *Microprocessor Enhancement Corp. v. Texas Instruments Inc.*, 86 USPQ2d 1225 (Fed. Cir. 2008). The question is: can the person skilled in the art know from the steps recited for claims 1 and 18 when infringement occurs? The answer is emphatically yes, and this is so regardless of the particular structure of the sensor. That is, the “particular sensor” in claim 18 means any sensor for which “a function is specified.” So long as there is no ambiguity as to when a claim is infringed, *id* at 1230, there can be no indefiniteness..

(2)

### 35 USC 102

For anticipation under 35 USC 102 to apply to a claim it is necessary that each and every structural limitation of the claim or step of a method claim be found in a single reference, *In re Bond*, 15 USPQ2d 1566 (Fed. Cir 1990). Here independent claim 16, the only independent claim, defines six (6) positively recited steps. For Choe to anticipate claim 16, it (Choe) must disclose all six (6) steps. If only one is lacking, there can be no anticipation. It is respectfully submitted that at least two of the recited steps are not taught by Choe, the evaluating and predicting steps. The portions of Choe that the examiner suggests provide the teaching of these two steps, is misplaced and amounts to overreaching in the final rejection. The “learning time” feature disclosed in column 19 of Choe is not, it is respectfully submitted, amount to the evaluating step of claim 16 to achieve functional monitoring.

## **CONCLUSION**

Claim 18 is considered definite and claims 16 - 30 are considered patentable over Choe. Accordingly, and in view of the above, it is respectfully submitted that claims 16 - 30 should be allowed.

Respectfully submitted

BACON & THOMAS, PLLC



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## **APPENDIX OF CLAIMS**

(37 CFR 41.37 (c)(1)(viii)

Claims 1 - 15 (Cancelled).

16. A method for monitoring the functioning of sensors which measure and monitor the state parameters of liquids or gases, comprising the steps of:

placing the sensor in a test state at time intervals;

registering test parameters at time intervals or at time intervals during the course of registering measured values;

storing the registered test parameters;

evaluating a backward-looking chronological development of the stored test parameters in order to perform functional monitoring;

predicting from said evaluations the development of sensor behavior to be expected in the future; and

obtaining thereby information concerning the duration of the remaining disturbance-free operation of the sensor.

17. The method as defined in claim 16, wherein:

said evaluation step is conducted using non-linear interpolation methods, in order to obtain a function describing the sensor behavior.

18. The method as defined in claim 16, wherein:

a function is specified and used for a particular sensor, which reproduces the experience-based behavior of the particular sensor.

19. The method as defined in claim 18, wherein:

the function involves a polynomial function.

20. The method as defined in claim 16, wherein:

a first predictive value is determined for the wear limit.

21. The method as defined in claim 16, further comprising the step of:

testing whether the wear limit of the sensor will be reached before the next registering of test parameters.

22. The method as defined in claim 16, further comprising the step of:

testing whether a predictively obtained value of the text parameter lies within a warning range this side of the wear limit as defined at this time.

23. The method as defined in claim 16, further comprising the step of:

determining and issuing and/or displaying, initiating measures for maintenance on the basis of the information concerning the duration of the remaining, disturbance-free operation.

24. The method as defined in claim 16, further comprising the step of:

determining and, issuing a predictive point in time for replacement of the sensor on the basis of the information concerning the duration of the remaining, disturbance-free operation.

25. The method as defined in claim 16, wherein:  
as a test parameter, the slope of the sensor signal, or signals is registered and evaluated.
26. The method as defined in claim 16, wherein:  
as a test parameter, the zero point of the sensor signal, or signals is registered and evaluated.
27. The method as defined in claim 16, wherein:  
as a test parameter, the internal resistance of an electrode is registered and evaluated.
28. The method as defined in claim 16, wherein:  
as a test parameter, the change of the dynamic behavior of signals produced by the sensor itself is registered and evaluated.
29. The method as defined in claim 16, wherein:  
a plurality of different test parameters are registered and evaluated.
30. The method as defined in claim 16, further comprising the step of:

obtaining a sensor specific, basic data from a storage arrangement of the sensor or the measured value transmitter over the internet or over update media, for the evaluation.

EVIDENCE APPENDIX

There is no evidence being relied upon which was submitted pursuant to  
37 CFR 1.130, 1.131 or 1.132.

## RELATED PROCEEDINGS APPENDIX

There is no related proceeding being relied upon.

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